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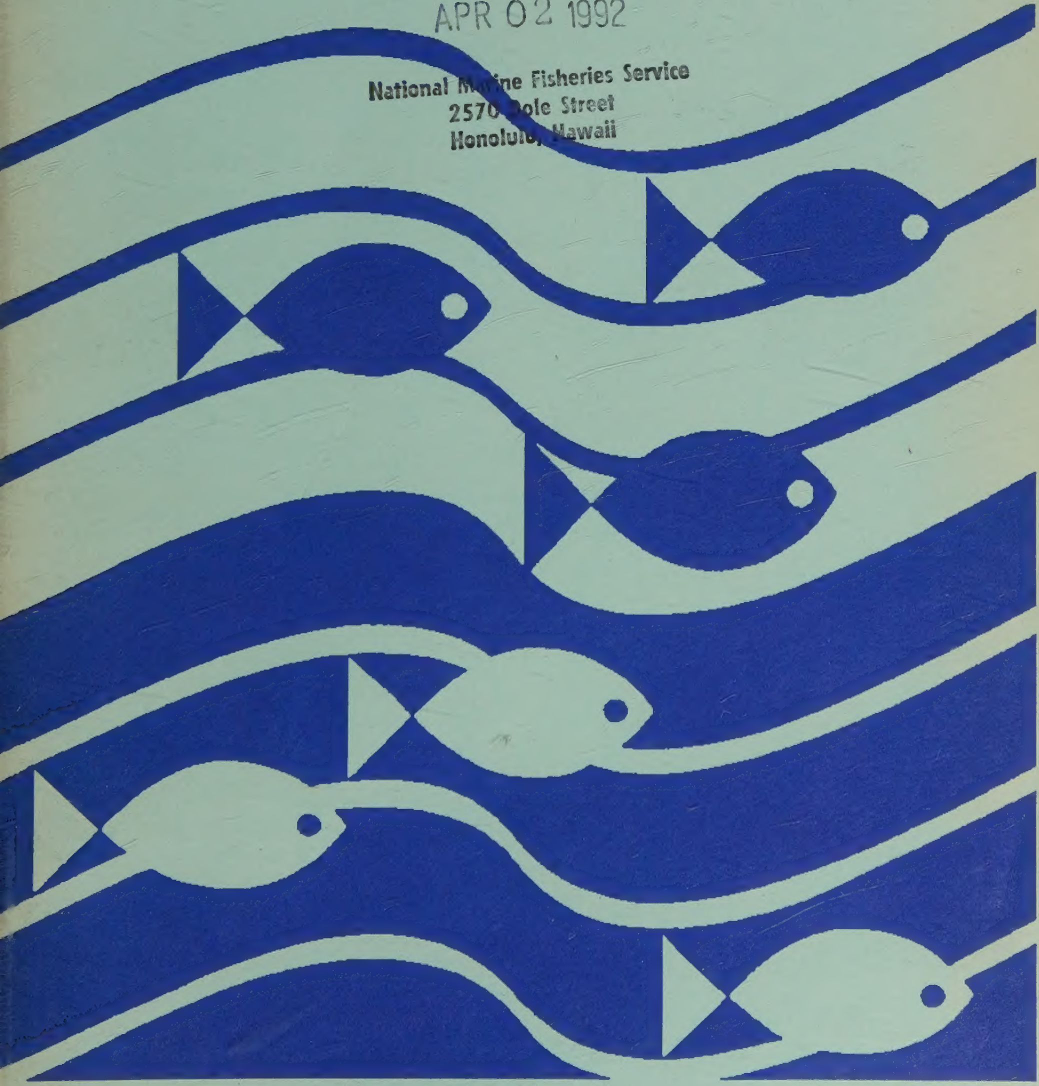

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Fisheries Review is intended to furnish fishery biologists with abstracts of current literature in sport, fishery research, and management.

One volume, consisting of four numbers, is issued each year. Each number contains separate Author, Geographic, Taxonomic, and Subject indexes. Authors who publish in journals not screened for *Fisheries Review*, and who would like their publications included, should submit abstracts to the Editor.

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EDITOR'S NOTE

The editor and staff of *Fisheries Review* wish to thank Diane Merrill of San Rafael, California for contributing the gyotaku art which adorns this issue. Gyotaku is prepared by applying ink to a washed and dried fish and then laying paper over the inked fish and pressing. Details such as lateral line and eyes are added by hand.

Recent issues of *Fisheries Review* have contained citations to over one thousand masters and doctoral works. We thank Homer "Jack" Kemp and his cooperators at participating universities for their efforts in retrieving references to these works. We especially thank Paul Purdy for his meticulous indexing of these works for inclusion in *Fisheries Review.*

Pete Walker of the Colorado Division of Wildlife noted an error in citation number 91-000843 of issue 36(1). It is the opinion of the U.S. Fish and Wildlife Service that while certain fish species display exceptionally advanced social behaviors none, especially the tilapias, have demonstrated morality.

FISHERIES REVIEW

AQUATIC PLANTS AND THEIR CONTROL

92-000001 Crowder, A. and D. S. Painter. SUBMERGED MACROPHYTES IN LAKE ONTARIO: CURRENT KNOWLEDGE, IMPORTANCE, THREATS TO STABILITY, AND NEEDED STUDIES. *Can. J. Fish. Aquat. Sci.* 48(8):1539-1545. 1991. In English with French summ. FR 37(1)
[Dep. Biol., Queen's Univ., Kingston, ON, Canada K7L 3N6] *Cyprinus carpio.*

92-000002 Hay, Mark E.; Joseph R. Pawlik; J. Emmett Duffy and William Fenical. SEAWEED-HERBIVORE-PREDATOR INTERACTIONS: HOST-PLANT SPECIALIZATION REDUCES PREDATION ON SMALL HERBIVORES. *Oecologia (Heidelb.)* 81(3):418-427. 1989. FR 37(1)
[Univ. N.C. Chapel Hill, Inst. Mar. Sci., Morehead City 28557] *Thalassoma lunare* in Australia.

92-000003 Petrell, R. J. and L. O. Bagnall. HYDROMECHANICAL PROPERTIES OF WATER HYACINTH MATS. *Aquacult. Eng.* 10(2):133-147. 1991. FR 37(1)
[Dep. Bio-Resour. Eng., Univ. British Columbia, 2357 Main St., Vancouver, BC, Canada V6T 1Z5]

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[Nansei Natl. Fish. Res. Inst., Ohno, Saeki, Hiroshima 739-04, Japan]

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[U.S. Fish & Wildl. Serv., Natl. Fish. Res. Cent., P.O. Box 818, La Crosse, WI 54602-0818]

92-000007 Bjorklund, H. V.; C. M. I. Rabergh and G. Bylund. RESIDUES OF OXOLINIC ACID AND OXYTETRACYCLINE IN FISH AND SEDIMENTS FROM FISH FARMS. *Aquaculture* 97(1):85-96. 1991. FR 37(1)
[Inst. Parasitol., Abo Akad. Univ., Porthansgatan 3, SF-20500 Abo, Finland] *Oncorhynchus mykiss* and *Alburnus alburnus.*

92-000008 Broussard, Meryl C., Jr. AQUACULTURE: OPPORTUNITIES FOR THE NINETIES. *J. Anim. Sci.* 69(10):4221-4228. 1991. FR 37(1)
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92-000010 Eskelinen, Unto. [FISH FARMING IN FINLAND IN 1986.] *Suom. Kalatalous* No. 58. p. 31-35. 1991. In Finnish with Swedish and English summ. FR 37(1)
[Finnish Game & Fish. Res. Inst., Fish. Div., Inform. Serv., P.O. Box 202, SF-00151 Helsinki, Finland]

92-000011 Iwama, George K. INTERACTIONS BETWEEN AQUACULTURE AND THE ENVIRONMENT. *Crit. Rev. Environ. Control* 21(2):177-216. 1991. FR 37(1)
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[Food Flavor Quality Res., U.S. Agric. Res. Serv., South. Reg. Res. Cent., New Orleans, LA 70179]

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[Dep. Agric. Econ. & Rural Sociol., Agric. Exp. Stn., Auburn Univ., Auburn, AL 36849-5406] *Ictalurus punctatus.*

92-000014 Mims, Steven D. and Julia A. Clark. OVERWINTERING PADDLEFISH IN MONOCULTURE AND IN POLYCULTURE WITH CHANNEL CATFISH AND RAINBOW TROUT. *J. Appl. Aquacult.* 1(1):95-101. 1991. FR 37(1)
[Community Res. Serv., Aquacult. Res. Cent., Ky. State Univ., Frankfort 40601] *Oncorhynchus mykiss, Polyodon spathula,* and *Ictalurus punctatus.*

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[Agric. Exp. Stn., Dep. Fish. & Allied Aquacult., Auburn Univ., Auburn, AL 36849-5419]

92-000017 Tave, Douglas. PEDIGREED MATING AND MANAGEMENT OF ENDANGERED SPECIES. *Aquacult. Mag.* 17(6):89-91. 1991. FR 37(1)
[Dep. Agric., Univ. Arkansas, Pine Bluff 71601]

92-000018 Watters, Michael P. PREPARING AN AQUACULTURE STATEMENT OF LENDER'S FINANCIAL POSITION. *Aquacult. Mag.* 17(5):53-56. 1991. FR 37(1)

TROUT AND SALMON CULTURE

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[Lab. Fish. Business Econ., Dep. Fishing Sci., Fac. Fish., Hokkaido Univ., Hakodate, Japan]

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[Dep. Maricult., Cent. Invest. Pesq., Barlovento, Playa, C.P. 19100, Ciudad de La Habana, Habana, Cuba]

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[Dir. Nat. Manage., Tungasletta 2, N-7400 Trondheim, Norway] *Salmo salar.*

92-000022 Gagliardi, Anne E. PRODUCTION OF MONOCLONAL ANTIBODIES TO ATLANTIC SALMON (*SALMO SALAR*) IMMUNOGLOBULIN. *M.S. thesis, Univ. Maine (Orono)* 102p. 1986. FR 37(1)

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[Inst. Freshwater Fish., Vagnhofdi 7, 112 Reykjavik, Iceland]

92-000024 Hansen, L. P.; T. Hastein; G. Naevdal; R. L. Saunders and J. E. Thorpe, editors. INTERACTIONS BETWEEN CULTURED AND WILD ATLANTIC SALMON. PROCEEDINGS OF A SYMPOSIUM HOSTED BY THE DIRECTORATE FOR NATURE MANAGEMENT AND NORWEGIAN INSTITUTE FOR NATURE RESEARCH. HELD AT HOTEL ALEXANDRA, LOEN, NORWAY, 23-26 APRIL 1990. *Aquaculture* 98(1-3):324p. 1991. FR 37(1)
[Norwegian Inst. Nat. Res., Tungasletta 2, N-7004 Trondheim, Norway] Individual papers indexed in this issue of *Fisheries Review.*

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[Auke Bay Lab, Fish. Sci. Cent., NMFS, NOAA, P.O. Box 210155, Auke Bay, AK 99821] *Oncorhynchus.*

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92-000027 Hughes, Peter D. EFFECTS OF TRUCKING AND SENSORY IMPAIRMENT ON THE BEHAVIOR OF ADULT AMERICAN SHAD, *ALOSA SAPIDISSIMA*, IN THE HOLYOKE POOL, CONNECTICUT RIVER, MASSACHUSETTS. *M.S. thesis, Univ. Mass.* 77p. 1976. FR 37(1)

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[Hokkaido Salmon Hatchery, Fish. Agency, 2-2 Nakanoshima, Toyohira-ku, Sapporo 062, Japan] *Oncorhynchus masou* and *O. nerka.*

92-000029 Kobayashi, Miki; Yutaka Murakami; Toshinori Iwami and Houji Okada. [ECOLOGICAL STUDIES OF MASU SALMON *(ONCORHYNCHUS MASOU)*. II. SEAWARD MIGRATION OF THE PROGENY OF POND CULTURED MASU SALMON RELEASED INTO THE FURUU RIVER.] *Sci. Rep. Hokkaido Fish Exp. Stn.* No. 45. p. 63-75. 1991. In Japanese with English summ. FR 37(1)
[Hokkaido Fish Hatchery, Kitakashiwagi-cho, Eniwa, Hokkaido 061-14, Japan]

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[Norwegian Inst. Nat. Res., Tungasletta 2, N-7004 Trondheim, Norway]

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[Norwegian Inst. Nat. Res., Tungasletta 2, N-7004 Trondheim, Norway]

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92-000034 McNeil, William J. EXPANSION OF CULTURED PACIFIC SALMON INTO MARINE ECOSYSTEMS. *Aquaculture* 98(1-3):173-183. 1991. FR 37(1)
[Coop. Inst. Mar. Resour. Studies, Oreg. State Univ., Newport 97365] *Oncorhynchus keta, O. tshawytscha,* and *O. kisutch* in Japan, Alaska, and Oregon.

92-000035 No, Hong Kyoon and Trond Storebakken. PIGMENTATION OF RAINBOW TROUT WITH ASTAXANTHIN AT DIFFERENT WATER TEMPERATURES. *Aquaculture* 97(2/3):203-216. 1991. FR 37(1)
[Storebakken: AKVAFORSK (Inst. Aquacult. Res.), N-6600 Sunndalsora, Norway] *Oncorhynchus mykiss.*

92-000036 Nortvedt, Ragnar and Jens Chr. Holm. ATLANTIC SALMON IN DUOCULTURE WITH ARCTIC CHARR: DECREASED AGGRESSION ENHANCES GROWTH AND STOCKING DENSITY POTENTIAL. *Aquaculture* 98(4):355-361. 1991. FR 37(1)
[Div. Aquacult. Inst. Mar. Res., P.O. Box 1870, Nordnes, N-5024 Bergen, Norway] *Salvelinus alpinus* and *Salmo salar.*

92-000037 Peterson, Louis K.; John M. D'Auria; Brian A. McKeown; Karen Moore and Michael Shum. COPPER LEVELS IN THE MUSCLE AND LIVER TISSUE OF FARMED CHINOOK SALMON, *ONCORHYNCHUS TSHAWYTSCHA. Aquaculture* 99(1/2):105-115. 1991. FR 37(1)
[Dep. Chem., Simon Fraser Univ., Burnaby, BC, Canada V5A 1S6]

92-000038 Saunders, Richard L. POTENTIAL INTERACTION BETWEEN CULTURED AND WILD ATLANTIC SALMON. *Aquaculture* 98(1-3):51-60. 1991. FR 37(1)
[Dep. Fish. & Oceans, Biol. Stn., St. Andrews, NB, Canada E0G 2X0] *Salmo salar* in Europe and North America.

92-000039 Shad, S. K.; Mridula Lakhanpal and Kuldip Kumar. AN ECONOMIC APPRAISAL OF FISH PONDS IN HIMACHAL PRADESH - A CASE STUDY. *Punjab Fish. Bull.* 15(1):39-46. 1991. FR 37(1)
[Himachal Pradesh Gov., Khalini, Shimla-171 002, India] *Salmo trutta.*

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[Ocean Sci., Cent./Dep. Biol., Memorial Univ. Newfoundland, St. John's, NF Canada A1C 5S7]

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92-000042 Tsintsadze, Z. A. ADAPTATIONAL CAPABILITIES OF VARIOUS SIZE-AGE GROUPS OF RAINBOW TROUT IN RELATION TO GRADUAL CHANGES OF SALINITY. *J. Ichthyol. (Engl. Transl. Vopr. Ikhtiol.)* 31(3):31-38. 1991. FR 37(1)
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Oncorhynchus mykiss irideus.

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[Lab. Ecol. Physiol. Salmon, Inst. Mar. Biol., 683000 Petropavlovsk-Kamchatsky, USSR]

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[Dep. Fish. Biol. & Limnol., Bangladesh Agric. Univ., Mymensingh, Bangladesh] *Salmo trutta.*

WARMWATER CULTURE

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[Aquacult. Dep., SEAFDEC, P.O. Box 256, 5000 Iloilo City, Philippines] *Chanos chanos.*

92-000048 Allan, Kenneth O. HEAT RESISTANCE AND TEMPERATURE ACCLIMATION RATES IN CHANNEL CATFISH, *ICTALURUS PUNCTATUS* (RAFINESQUE). *M.S. thesis, Univ. Arkansas* 45p. 1967. FR 37(1)

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[Binangonan Res. Stn., SEAFDEC, Binangonan, Rizal, Philippines]

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[Baobab Farm Ltd., Box 90202, Mombasa, Kenya] *Tilapia.*

92-000051 Bard, Jacques. [REVIEW OF THE INLAND FISH CULTURE OF NORTH-VIETNAM.] *Bois For. Trop.* 228(2):74-77. 1991. In French. FR 37(1)

Ophicephalus striatus, Cyprinus carpio, Cirrhinus mrigala, Labeo rohita, Ctenopharyngodon idella, Hypophthalmichthys molitrix, Aristichthys nobilis, Tilapia nilotica, and *T. mossambica.*

92-000052 Barrows, Frederic T.; Greg A. Kindschi and Charlie E. Smith. WALLEYE RESEARCH SUMMARY, 1990 SEASON CONDUCTED AT BOZEMAN FISH TECHNOLOGY CENTER. *U.S. Fish Wildl. Serv. Bozeman Inf. Leafl.* No. 68. 69p. 1991. FR 37(1)

[U.S. Fish & Wildl. Serv., Fish Technol. Cent., 4050 Bridger Canyon Rd., Bozeman, MT 59715] *Stizostedion vitreum.*

92-000053 Bautista, M. N.; M. J. del Valle and F. M. Orejana. LIPID AND FATTY ACID COMPOSITION OF BRACKISHWATER- AND FRESHWATER-REARED MILKFISH (*CHANOS CHANOS* FORSKAL). *Aquaculture* 96(3/4):241-248. 1991. FR 37(1)

[Aquacult. Dep., SEAFDEC, P.O. Box 256, Iloilo City, Philippines]

92-000054 Bayne, David R.; Purushottam L. Joshi; Ash K. Rai and John C. Williams. GROWTH AND FOOD HABITS OF CAGE-CULTURE BIGHEAD CARP X SILVER CARP HYBRIDS IN PONDS OF VARYING TROPHIC STATUS. *J. Appl. Aquacult.* 1(1):45-55. 1991. FR 37(1)

[Dep. Fish. & Allied Aquacult., Agric. Exp. Stn., Auburn Univ., Auburn, AL 36849] *Aristichthys nobilis* and *Hypophthalmichthys molitrix.*

92-000055 Behrends, Leslie L. and R. Oneal Smitherman. USE OF WARM WATER EFFLUENTS TO INDUCE WINTER SPAWNING OF TILAPIA IN A TEMPERATE CLIMATE. *In: Proceedings of the International Symposium on Tilapia in Aquaculture. L. Fishelson and Z. Yaron, compilers.* p. 446-454. 1983. FR 37(1)

[Tenn. Valley Authority, F4 NFDC, Muscle Shoals, AL 35660] *Tilapia aurea, T. nilotica, T. mossambica,* and *T. hornorum.*

92-000056 Bondari, K.; E. D. Threadgill and J. A. Bender. TILAPIA CULTURE IN CONJUNCTION WITH IRRIGATION AND URBAN FARMING. *In: Proceedings of the International Symposium on Tilapia in Aquaculture. L. Fishelson and Z. Yaron, compilers.* p. 484-493. 1983. FR 37(1)

[Coastal Plain Stn., Univ. Ga., Tifton 31793] *Tilapia aurea.*

92-000057 Broussard, Meryl C., Jr.; Ruben Reyes and Felix Raguindin. EVALUATION OF HATCHERY MANAGEMENT SCHEMES FOR LARGE SCALE PRODUCTION OF *OREOCHROMIS NILOTICUS* FINGERLINGS IN CENTRAL LUZON, PHILIPPINES. *In: Proceedings of the International Symposium on Tilapia in Aquaculture. L. Fishelson and Z. Yaron, compilers.* p. 414-424. 1983. FR37(1)

[Bur. Fish. & Aquat. Resour., Freshwater Fish Hatchery & Ext. Training Cent., Nueva Ecija, Philippines]

92-000058 Bry, C.; M. G. Hollebecq; V. Ginot; G. Israel and J. Manelphe. GROWTH PATTERNS OF PIKE (*ESOX LUCIUS* L.) LARVAE AND JUVENILES IN SMALL PONDS UNDER VARIOUS NATURAL TEMPERATURE REGIMES. *Aquaculture* 97(2/3):155-168. 1991. FR 37(1)

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[Dep. Vet. Pathobiol., Tex. A&M Univ., College Station 77843] *Oncorhynchus keta, Notemigonus crysoleucas, Ictalurus punctatus,* and *Pomacanthus semicirculatus.*

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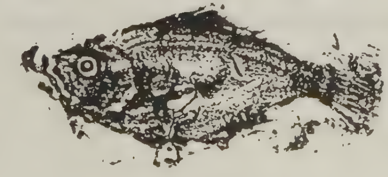

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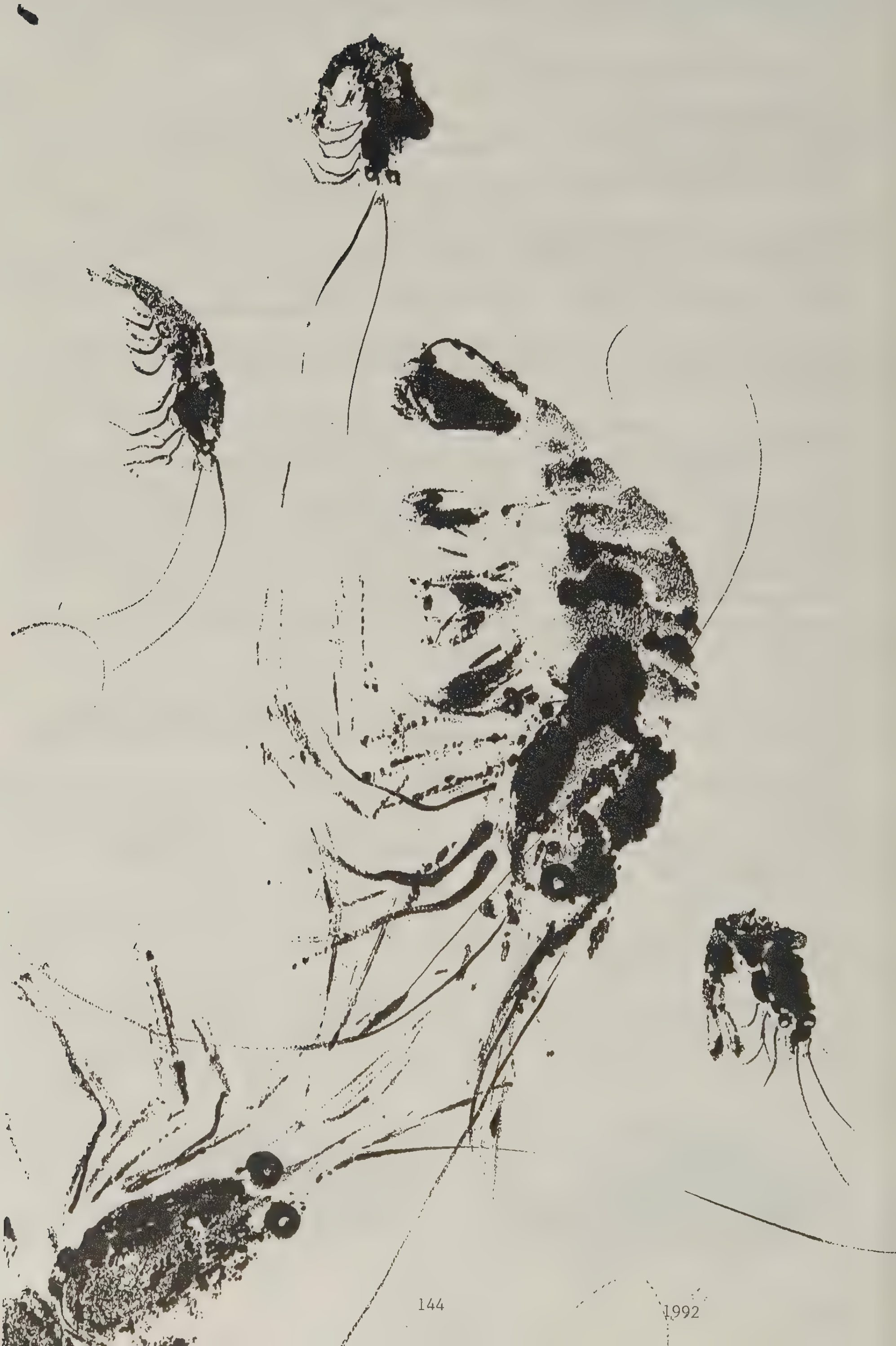

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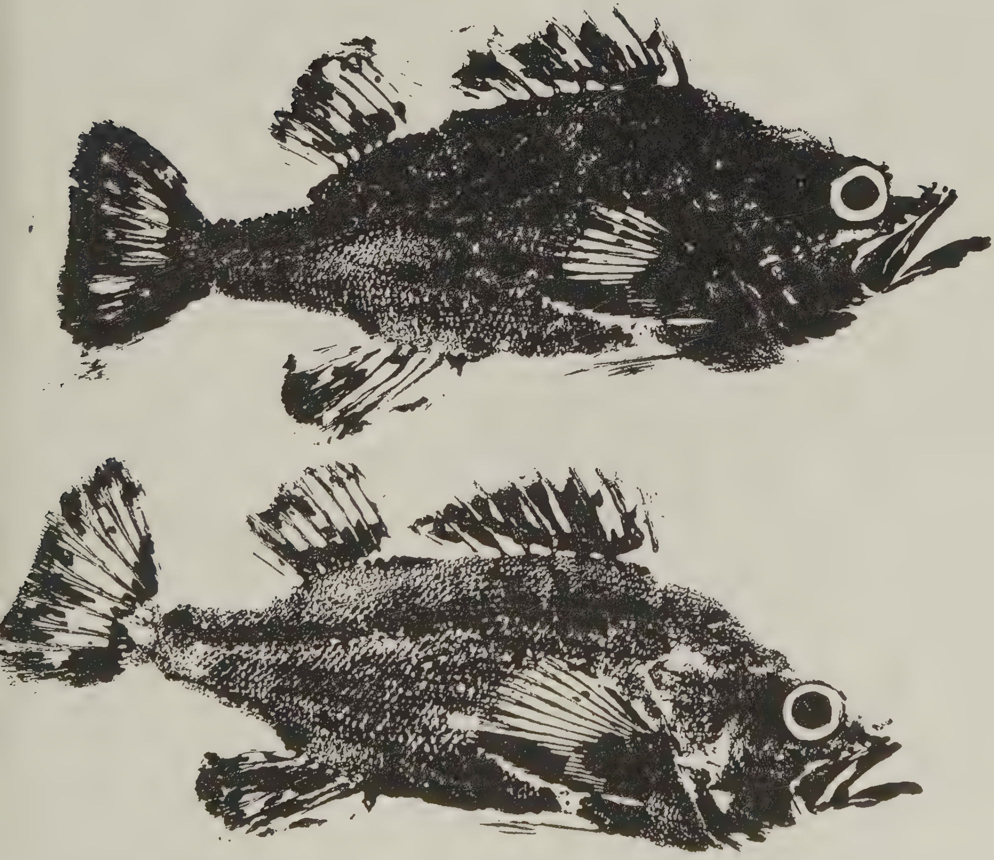

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- Abramis brama
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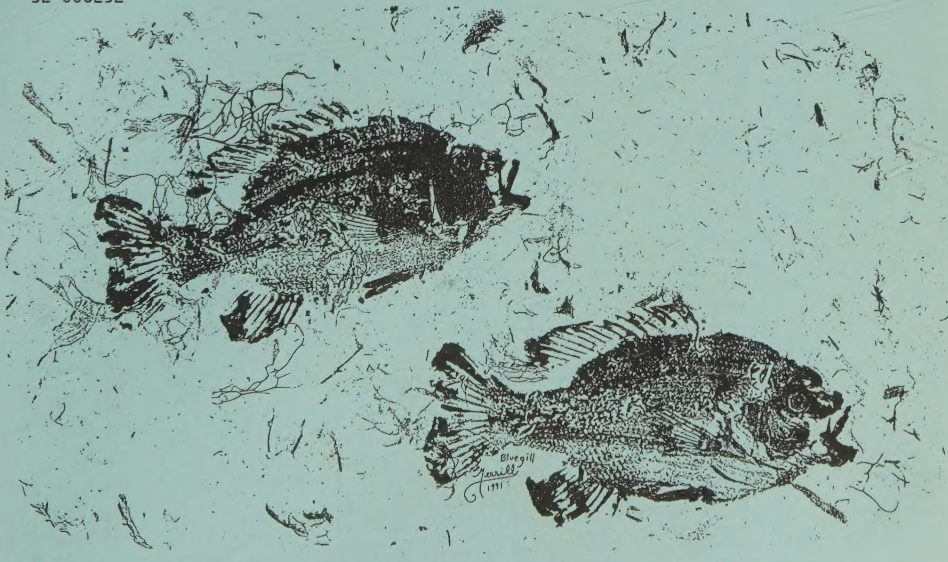

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March 3, 1849

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